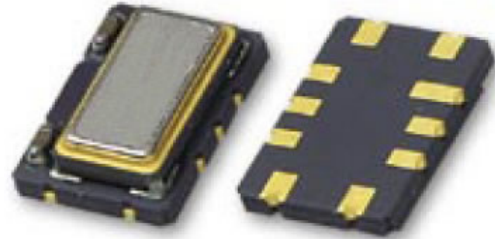


TCXO3404B-20MHz
 +/- 0.5 PPM Clock TCXO

Features

- Frequency 20 MHz
- 7mm x 5mm x 1.85mm ceramic SMD
- +/- 4.6 ppm total stability over 20 years
- CMOS output
- Tri-state Enable / Disable Function
- +/- 0.5 ppm from -40 to +85 centigrade degree

Picture of Part



Typical Applications

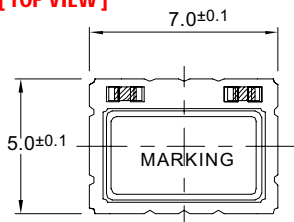
- Base stations
- 10 G-bit ethernet
- SONET
- GSM, CDMA, 3G, and 4G cellular

Description

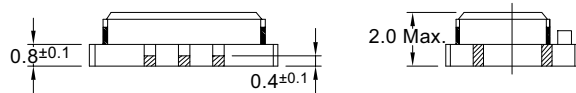
The TCXO3404 family offers low noise compensation techniques combined with aggressive conditioning processes resulting in outstanding long term stability, tightly distributed performance parameters, and superior long term reliability

Physical Dimensions

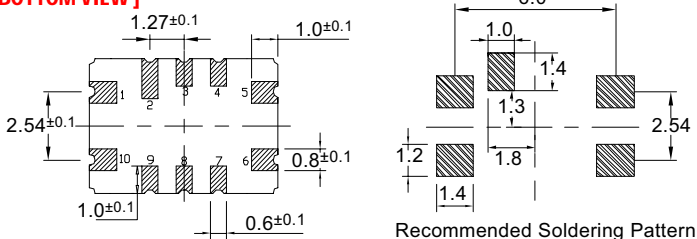
[TOP VIEW]



[SIDE VIEW]



[BOTTOM VIEW]



Recommended Soldering Pattern

Pin Connections

| Pad | Function |
|-----|----------------------------------|
| 1 | VCON : VC-TCXO NC : TCXO |
| 2 | NC |
| 3 | NC |
| 4 | NC |
| 5 | GND |
| 6 | CMOS/ Clipped Sinewave Output |
| 7 | NC |
| 8 | NC |
| 9 | Tri-State Control* |
| 10 | VDD |

TCXO3404B-20MHz
+/- 0.5 PPM Clock TCXO

Specification

| TCXO Specification | | Sym. | Condition | Value | | | Unit | Note |
|---|-------------------|--|-----------------------------------|--------------------|--------------------|--------------------|--------|-----------------------------|
| | | | | Min. | Typ. | Max. | | |
| Operational Frequency Range | | f ₀ | | | 20 | | MHz | |
| HCMOS Square Wave | Load | | | | | 15 | pF | |
| | H - level voltage | V _H | | 0.9V _{cc} | | | V | |
| | L - level voltage | V _L | | | | 0.1V _{cc} | V | |
| | Rise & Fall time | | | | | | ns | |
| | Duty cycle | | | 45 | | 55 | % | |
| | Level | L | | | | | pk-pk | |
| | Load Resistance | R _L | | | | | Kohm | |
| | Load Capacitance | C _L | | | | | pF | |
| Power supply | | | | | | | | |
| Voltage | | V _{cc} | | 3.135 | 3.300 | 3.465 | V | 5.0 V option available |
| Current consumption | | I _{cc} | | | | 6.0 | mA | square wave |
| Frequency control* | | | | | | | | |
| Control voltage range | | V _c | | | | | V | |
| Tuning range | | | | | | | ppm | |
| V _c Input Impedance | | | | | | | Kohm | |
| Frequency stability | | | | | | | | |
| vs. temperature | | | -40°C to +85°C, ref 25°C | -0.5 | | +0.5 | ppm | |
| vs. 5% change in supply voltage | | | ref V _{cc} typ. | -0.300 | | +0.300 | ppm | |
| Tolerance at 25C | | | | -2.000 | | +2.000 | ppm | Frequency 1 hr after reflow |
| SSB Phase noise @12.8 MHz CMOS typical Tri-state Enable / Disable | | | 100 Hz | | | -120 | dBc/Hz | |
| | | | 1000 Hz | | | -140 | | |
| | | | 10 kHz | | | -148 | | |
| | | | Output OFF | | | 0.3V _{cc} | | |
| | | | Output ON | | 0.7V _{cc} | | | |
| Total Tolerance | Over 20 years | | Projected after 30 days operation | -4.600 | | +4.600 | ppm | See NOTE 1 on Page 3 |
| Environmental, mechanical conditions. | | | | | | | | |
| Operating temperature range | | -40°C to +85°C maximum range available that is standard | | | | | | |
| Storage temperature range | | -55°C to +125°C | | | | | | |
| Mechanical shock | | | | | | | | |
| Vibration | | | | | | | | |
| Soldering | | | | | | | | |